

REMARKS

This paper responds to the Office action mailed on October 7, 2008. Applicants have amended claims 1, 3-6, 11-12, 14-16, 18-25, 27, and 30. Claims 2, 17, 28-29, and 31-33 are canceled, and claims 34-41 are added. As a result, claims 1, 3-16, 18-27, 30, and 34-41 are now pending in this application.

Request for Correction of U.S. Patent Office Errors in Application Prior to Issuance

Upon review of the published patent application, U.S. Publication No. 2007/0142231 A1, the following U.S. Patent Office errors were discovered:

In Paragraph [0003] of the specification:

Current minesweeping systems incorporating permanent magnets have the disadvantage of being very heavy structures, and, in general, are difficult if not impossible to ~~spert~~ transport by air because of potential interference with navigational compasses. Furthermore, they have limited options on source strength and orientation with respect to direction of advance of the minesweeping system.

In Paragraph [0042] of the specification:

Turning now to FIG. 2, the present invention can, in another embodiment, be extended to a multiple magnetic source configuration 100. In that configuration, a first or lead minesweeping device 110 of the type previously described with reference to FIG. 1 is used together with a number of separate magnetic source vessels e.g. 112, 114. In the embodiment shown in FIG. 2, the towed array of magnetic source vessels 112, 114 each comprise a superconducting material magnetic structure 116, which is basically identical to the superconducting material magnet

structure 14 described above with reference to FIG. 1. Between the lead device 110 and the other vessels e.g. 112, 114, combined tow/power "take-off" cable connections 118, 120 are provided, for power distribution from the turbine 122 of the lead device 110 to the magnet structures 116 of the other vessels e.g. 112, 114. In another configuration the devices can be individually powered or the ~~tailing~~ trailing device can have the turbine, with power being distributed to the leading vessels via the cable connections 118 and 120.

In Paragraph [0043] of the specification:

The cable connections 118, 120 also provide control interface communications between the control unit 124 of the lead device 110 and the magnet structures 116 of the other vessels 112, 114. Further communication links are provided via the cable connections 118, 120 for sensor signals obtained from sensor elements 126 of the other vessels 112, 114 to the control unit 124. It will be appreciated by the person skilled in the art that therefore a feedback mechanism can utilise feedback from the other vessels and the lead vessel 110 from its on-board sensors 128, 130 in the control of the power output and magnetic output of the overall minesweeping configuration 100. If the sweep were emulating (copying point by point) the signature of a vessel and the sweep were to change direction this change in direction should be accompanied by a change in magnetic output because the induced component of a ship's signature depends upon the orientation of the ship in the Earth's magnetic field. A velocity sensor or gyroscopic compass 128 detects the change in direction and then communicates the change to the control unit 124. The control unit then uses a look up table including signature ~~characteristics~~ characteristics of the target vessels and algorithms based on the above formulae (1) to (5) to adjust the output of the coils to create the new magnetic signature. A look up table may also be provided including the magnetic trigger signatures for triggering identified mines in MSM mode.

In Paragraph [0048] of the specification:

It will further be appreciated by the person skilled in the art that numerous modifications and/or variations may be made to the present invention as shown in the specific embodiments without departing from the spirit or scope of the invention as broadly ~~describe~~. described. The present embodiments are, therefore, to be considered in all respects to be illustrative and not restrictive.

Because these errors were introduced by the U.S. Patent Office, Applicants have not included them in the "Amendment" section of this paper. Applicants respectfully request that these errors be corrected prior to issuance of this application.

Information Disclosure Statement

Applicants submitted a Supplemental Information Disclosure Statement and a 1449 Form on October 31, 2008. Applicants respectfully request that initialed copies of the 1449 Forms be returned to the undersigned representatives to indicate that the cited references have been considered by the Examiner.

Rejections under 35 U.S.C. §112

On page 2, paragraph 2 of the Office action, the Examiner rejected claims 15-18 and 27-29 under 35 U.S.C. § 112, second paragraph, for indefiniteness. Specifically, the Examiner stated that, "Claims 15 and 27 attempt to claim more than one device. Such is improper as the recitations broaden the claimed subject matter of a singular device."

With regard to claims 27 – 29, Applicants have amended claim 27 to be an independent claim and have canceled claims 28-29. Applicants have also canceled claim 17. With regard to claim 15, Applicants respectfully disagree with the Examiner's assessment.

Claim 15 adds limitations to claim 1, from which it depends. Specifically, claim 15 recites, *inter alia*, a device

[A]rranged in an array, wherein the devices each comprise *an interface unit for interfacing the device to at least one adjacent device in the array*, wherein *at least one of the plurality of devices receives current input and the interface unit comprises an electrical output for power “take-off”* to the at least one adjacent minesweeping device in the array. (Emphasis added.)

Since additional devices “arranged in an array” are added to claim 1, the additional devices and the arrangement in an array each constitute additional limitations over claim 1. Therefore, the recitations of claim 15 do not “broaden the claimed subject matter” as the Examiner asserts (*Office action* at 2, paragraph 3), but rather, narrow the claimed subject matter.

Additionally, additional devices are not precluded from claim 1. The transitional preamble allows, but does not necessarily require, the possibility of additional devices. “This court has consistently emphasized that the indefinite articles ‘a’ or ‘an,’ when used in a patent claim, mean ‘one or more’ in claims containing open-ended transitional phrases such as ‘comprising.’” (*Crystal Semiconductor Corp. v. Tritech Microelectronics Int’l, Inc.*, 246 F.3d 1336, 57 U.S.P.Q.2d 1953 (Fed. Cir. 2001).) Thus, a plurality of the devices as found in claim 15 is not precluded by claim 1. Therefore, since additional limitations are added to claim 15 and the plurality of devices is not precluded by claim 1, Applicants respectfully request that the Examiner withdraw the rejection under claim 35 U.S.C. § 112, second paragraph, with regard to claim 15. Further, since claim 16 depends from claim 15, it too is patentable.

Rejections under 35 U.S.C. §103(a)

On page 2, paragraph 6 of the *Office action*, the Examiner rejected claims 1-30 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,213,021 to *Pickett* in view of U.S. Patent No. 5,552,372 to Ackermann et al. (*Ackermann*). Since a *prima facie* case of obviousness has not been properly established, Applicants respectfully traverse the rejection.

The recent U.S. Supreme Court decision of *KSR v. Teleflex* provides a tripartite test to evaluate obviousness.

A rationale to support a conclusion that a claim would have been obvious is that *all the claimed elements were known in the prior art* and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art. (See *KSR International Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 82 U.S.P.Q.2d 1385 (2007)). Emphasis added.)

Applicants will show that the cited references, either singly or in combination, neither teach nor suggest all limitations of Applicants' claims.

Independent Claims

For example, Applicants' amended claim 1 recites a magnetic signature minesweeping device including, *inter alia*,

[A] control unit arranged to control a magnetic output of the superconducting magnet; and

a heading sensor in communication with the control unit to monitor a magnetic heading of the device, the control unit being further arranged to control the magnetic output of the superconducting material magnet responsive to the magnetic heading, and cause different magnetic outputs to be provided for different magnetic headings.

Applicants' other independent claims 20, 27, and 30, each recite similar limitations.

In contrast to Applicants' claimed element of a "control unit arranged to *control* a magnetic output of the superconducting magnet," *Pickett* discusses control circuitry that merely *establishes* a simulated magnetic signature and *supplies current to the wing drive motor* to maintain a preselected depth.

[C]ontrol circuitry 42 is provided in association with the rectifier circuitry 40 as diagrammed in FIG. 2 *to establish the simulated magnetic signature of the magnetic field* during travel of the underwater vehicle 14 at the preselected underwater depth 16, maintained by regulatory *control of the electrical current supplied by the control circuitry 42* to the wing drive motor 34.” (*Pickett* at col. 2, lines 22-28)

Pickett is silent on actually **controlling** a magnetic output, but rather, *Pickett* merely **establishes a simulated signature**. Further, *Pickett* is completely silent on the control unit being arranged to “control the magnetic output of the superconducting material magnet responsive to the magnetic heading, and cause different magnetic outputs to be provided for different magnetic headings” as recited by Applicants’ amended claim 1.

Pickett also fails to disclose “a heading sensor in communication with the control unit to monitor a magnetic heading of the device,” as recited by Applicants’ claim 1. *Pickett* is completely silent on any concept of a heading sensor. Although not relied upon by the Examiner to disclose a heading sensor, *Ackermann* is equally silent on point. Since the cited references fail to disclose that “all the claimed elements were known” as required under *KSR*, Applicants respectfully request that the rejection made under 35 U.S.C. §103(a) with respect to independent claims 1, 20, 27, and 30 be reconsidered and withdrawn.

Dependent Claims

On page 6, paragraph 18 of the Office action, the Examiner stated that claim 14 “contains a limitation concerning the method/manner of operating the device, i.e., ‘is programmed’” In response, Applicants have amended claim 14 to recite a device “configured to produce a magnetic signature.” Therefore, Applicants have eliminated the terminology the Examiner believes is a method limitation.

Claims 3-6, 11-12, 14-16, 18, 19, and 21-25 all depend, either directly or indirectly, from claims 1, 20, or 27 which Applicants have shown to be patentable. Also, new claims 34-41 also depend from one of these independent claims. Therefore, each of these dependent claims is

allowable for at least the same reasons as the claim from which it depends. Further, each of these dependent claims may be patentable for its own limitations. Consequently, Applicants respectfully request that the rejections made under 35 U.S.C. §103(a) with respect to these dependent claims be reconsidered and withdrawn.

Reservation of Rights

In the interest of clarity and brevity, every assertion made in the Office action may not have been addressed; however, this does not constitute any admission or acquiescence. All rights not exercised in connection with this response, such as the right to challenge or rebut any tacit or explicit characterization of any reference or of any of the present claims, the right to challenge or rebut any asserted factual or legal basis of any of the rejections, the right to swear behind any cited reference such as provided under 37 C.F.R. § 1.131 or otherwise, or the right to assert co-ownership of any cited reference, are expressly reserved. It is not admitted that any of the cited references or any other references of record are relevant to the present claims, or that they constitute prior art. To the extent that any rejection or assertion is based upon the Examiner's personal knowledge, rather than any objective evidence of record as manifested by a cited reference, any such reliance on Official Notice is objected to, and all rights to request that the Examiner provide a reference or affidavit in support of such assertion, as required by MPEP §2144.03, are reserved. All rights to pursue any canceled claims in a subsequent patent application claiming the benefit of priority of the present patent application, and to request rejoiner of any withdrawn claim, are reserved, as required by MPEP §821.04.

CONCLUSION

Applicants respectfully submit that the claims are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited to telephone the undersigned representative at (408) 660-2015 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

SCHWEGMAN, LUNDBERG & WOESSNER, P.A.
P.O. Box 2938
Minneapolis, MN 55402
(408) 660-2015

Date 2/6/2009

By



Bradley W. Scherer
Reg. No. 47,059

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being filed using the USPTO's electronic filing system EFS-Web, and is addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on February 6th, 2009.

CHERYL L. DANKERS

Name


Signature